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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,059	07/09/2003	Tomoaki Shoji	TOYA115.008AUS	4996

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EXAMINER

GORDON, BRIAN R

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,059

Applicant(s)

SHOJI, TOMOAKI

Examiner

Brian R. Gordon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 5-7 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Bass US 6,943,036.

Bass discloses a method, apparatus, and computer program product, for forming an addressable array of chemical moieties on a hydrophobic substrate using an inkjet head. The method may include, for each of multiple locations on the substrate, depositing a reagent drop set during a cycle so as to attach a corresponding moiety for that location. This may be repeated as required, until the addressable array is formed.

The method includes for each of multiple locations (sometimes referenced as "feature locations") on the substrate, depositing a reagent drop set during a cycle so as to attach a corresponding moiety for that location. The foregoing is repeated as required, until the addressable array is formed. In any event, for each of multiple locations, a multi-dispenser drop group (a plurality of drops) is deposited over one or more cycles for a corresponding feature location which group includes drops which are deposited from different dispensers.

As shown in figure 5, multiple drops are deposit at different locations and merge/overlap together on the substrate.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 3-4, 8-9, and 11-12 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bass US 6,943,036.

While Bass does not specify imaging a square, Bass does disclose the invention realizes that drop dispenser errors may be evaluated by detecting (such as by imaging) one or more drops deposited by the dispenser onto the substrate during array fabrication. After detection corrective measures may be applied to dispense heads and drops are subsequently deposited at the target locations (circles). One can clearly see that if 4 target locations are imaged they may be in a square configuration.

6. Claim 1-2, 5-7 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over William et al., GB 2,157,623.

William et al. disclose a method of operating an ink jet apparatus to control dot size. The volume of ink ejected from the nozzle 202 of an inkjet printing apparatus comprising a chamber 200 and transducer 204 during one cycle of operation for printing a dot upon a recording medium is controlled within that cycle of operation by operating the inkjet apparatus via the application of a pulse train T₁ to T₄ having a periodicity equivalent to the dominant resonant frequency of the inkjet apparatus. In this way each pulse of the pulse train causes an ink droplet of substantially predictable volume to be ejected at the nozzle 202. A given number of successive pulses during each printing cycle is applied to the inkjet apparatus for causing an equal number of ink droplets to be ejected for controlling the boldness of the dot being printed (abstract).

In operating the illustrative inkjet device previously described herein, the inventors discovered that by synchronously exciting either one or a combination of the fluidic and mechanical resonant frequencies of the inkjet apparatus for producing a dominant resonant frequency disturbance within the associated ink chamber and ink, permitting either one of one-cycle, or one subharmonic cycle of the dominant resonant frequency to be produced, that the volume of ink droplets ejected is controllable. They further discovered that by repeating this operation in an iterative or successive manner, with each repetition cycle being in synchronism with the dominant resonant frequency of the inkjet apparatus, a plurality of ink droplets can be ejected within a time period permitting the droplets to merge while airborne or upon the recording medium,

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thereby permitting substantial control over the resultant dot size upon the recording medium relative to the dot size obtained from a single droplet of ink. The resultant dot size is dependent upon the number of times within a given time period that the inventive method of operation is repeated. Figure 12 shows nine droplets 301-309 in flight for producing a dot on a recording medium using the method of the present invention (page 3 lines 25-37).

While Williams does not specify the substrate as being water repellant one of ordinary skill in the art at the time of the invention would envision employing the method of Williams to deposit material on a hydrophobic surface.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Webb, Peter G.; Caren, Michael P. et al.; Webb, Peter G.; Shchegrova, Svetlana V. et al.; Churchill, Carl et al.; Fisher, William D.; Webb; Peter G.; and Williams; Roger O. et al. disclose inkjet spotting devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'ERH' followed by a long horizontal stroke.

brg